

PATENT COOPERATION TREATY

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NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents
 United States Patent and Trademark
 Office
 Box PCT
 Washington, D.C.20231
 ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 03 October 2000 (03.10.00)	
International application No. PCT/IB00/00104	Applicant's or agent's file reference W/C/109
International filing date (day/month/year) 02 February 2000 (02.02.00)	Priority date (day/month/year) 03 February 1999 (03.02.99)
Applicant CROUSE, Jason, Lee	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:
 01 September 2000 (01.09.00)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer Juan Cruz Telephone No.: (41-22) 338.83.38
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PATENT COOPERATION TREATY

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INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference W/C/109	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/IB 00/ 00104	International filing date (day/month/year) 02/02/2000	(Earliest) Priority Date (day/month/year) 03/02/1999
Applicant CROUSE, Jason, Lee		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No. 1

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

☐ Non of the figures.

INTERNATIONAL SEARCH REPORT

International Application No
PCT/IB 00/00104

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A63B57/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A63B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 2 258 161 A (ST JOHN ET AL.) 3 February 1993 (1993-02-03) the whole document	1-14
X	WO 95 07118 A (SVENSSON) 16 March 1995 (1995-03-16)	1-12
A	page 4, paragraph 2 -page 5, last paragraph; figures 1,5,6	13,14
X	DE 90 05 261 U (TOPIARZ) 12 July 1990 (1990-07-12)	1-11,13, 14
A	the whole document	12
X	GB 236 132 A (LLOYD) 23 July 1925 (1925-07-23)	1-9,13, 14
A	page 1, line 94 -page 2, line 31; figures 4-6	12
	-/--	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *&* document member of the same patent family

Date of the actual completion of the international search

26 April 2000

Date of mailing of the international search report

04/05/2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3018

Authorized officer

Williams, M

INTERNATIONAL SEARCH REPORT

International Application No
PCT/IB 00/00104

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>PATENT ABSTRACTS OF JAPAN vol. 016, no. 509 (C-0997), 21 October 1992 (1992-10-21) & JP 04 189374 A (TSUGUYASU SAKAMOTO), 7 July 1992 (1992-07-07) abstract</p> <p style="text-align: center;">-----</p>	<p>1-9, 12, 13</p>

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/IB 00/00104

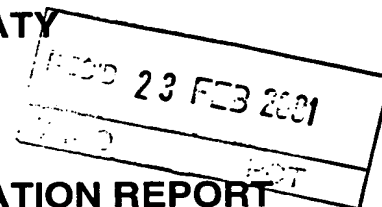
Patent document cited in search report		Publication date	Patent family member(s)	Publication date
GB 2258161	A	03-02-1993	NONE	
WO 9507118	A	16-03-1995	AU 7628394 A SE 9302864 A	27-03-1995 07-03-1995
DE 9005261	U	12-07-1990	AU 7774691 A WO 9116951 A EP 0527965 A	27-11-1991 14-11-1991 24-02-1993
GB 236132	A		NONE	
JP 04189374	A	07-07-1992	NONE	

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)



Applicant's or agent's file reference W/C/109	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/IB00/00104	International filing date (day/month/year) 02/02/2000	Priority date (day/month/year) 03/02/1999
International Patent Classification (IPC) or national classification and IPC A63B57/00		
Applicant CROUSE, Jason, Lee		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 5 sheets, including this cover sheet.

- ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 5 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 01/09/2000	Date of completion of this report 21.02.2001
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Grüchtel, F Telephone No. +49 89 2399 2012 

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/IB00/00104

I. Basis of the report

1. This report has been drawn on the basis of *(substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments (Rules 70.16 and 70.17).)*:

Description, pages:

1-4 with telefax of 06/02/2001

Claims, No.:

1-4 with telefax of 06/02/2001

Drawings, sheets:

1/1 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/IB00/00104

☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):
(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims 1-4
	No: Claims
Inventive step (IS)	Yes: Claims 1-4
	No: Claims
Industrial applicability (IA)	Yes: Claims 1-4
	No: Claims

**2. Citations and explanations
see separate sheet**

Cited Documents

The following documents indicated in the search report are referred to in this written opinion; the numbering will be adhered to in the rest of the procedure:

D1 GB 2 258 161 A (St John et al.)

Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

v.1 Independent Claim 1: (New and Inventive)

Document D1, considered as the closest prior art, discloses a golf tee in accordance with the pre-characterising portion of independent claim 1.

The subject-matter of independent claim 1 differs from the golf tee as disclosed in document D1 in that the annular support surface formed by the bristles of the golf tee has an inside radius (R1) of 5mm and an outside radius (R2) of 7,5mm.

The technical problem to be solved by this distinguishing feature is the provision of a golf tee which allows an optimum stable surface for supporting a golf ball, while providing a minimum resistance to a golf club when the golf club passes through said bristles for hitting the golf ball.

The solution as defined above is not known from any of the documents cited in the search report, is not rendered obvious by any of these documents alone or in combination, and is not a matter of normal design procedure.

Hence the subject-matter of independent claim 1 fulfills the requirements of the PCT with respect to novelty and inventive step.

v.2 Dependent Claims:

Dependent claims 2 to 4 are referring to independent claim 1, and hence are also new and inventive.

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/IB00/00104



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ : A63B 57/00	A1	(11) International Publication Number: WO 00/45905 (43) International Publication Date: 10 August 2000 (10.08.00)
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(21) International Application Number: PCT/IB00/00104

(22) International Filing Date: 2 February 2000 (02.02.00)

(30) Priority Data:
99/0825 3 February 1999 (03.02.99) ZA(71)(72) Applicant and Inventor: CROUSE, Jason, Lee [ZA/ZA];
50 Hannablen Street, Linksfield Ridge, 2198 Johannesburg
(ZA).(74) Agents: GILSON, David, Grant et al.; Spoor and Fisher,
Rochester Place, 173 Rivonia Road, Morningside, Sandton,
P.O. Box 41312, 2024 Craighall (ZA).(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG,
BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE,
ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP,
KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA,
MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU,
SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG,
US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE,
LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM,
AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT,
BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU,
MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM,
GA, GN, GW, ML, MR, NE, SN, TD, TG).

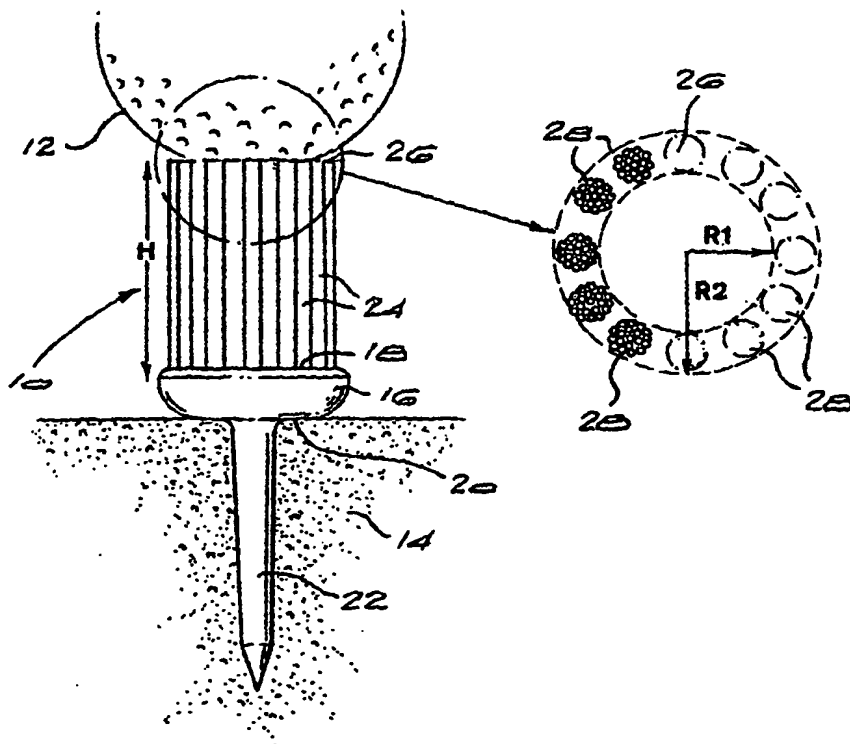
Published

With international search report.

(54) Title: GOLF TEE

(57) Abstract

This invention relates to a golf tee (10) for supporting a golf ball (12) on a ground surface (14). The golf tee (10) includes a base (16) which supports a number of bristles (24) which in turn support the golf ball (12). The bristles (24) are arranged to form an annular support surface (26) which supports the golf ball (12). A shaft (22), which is arranged to be pushed into the ground surface (14), extends from the base (16). The bristles (24) of the golf tee (10) are not broken when the golf ball (12), supported at the golf tee (10), is hit by the face of a golf club. Further, the bristles (24) do not damage the face of the golf club and provide little deflection to the face of the golf club when a golf ball (12) is hit.



FOR THE PURPOSES OF INFORMATION ONLY

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REPLACED BY
ART 34 AMDT

WO 00/45905

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PCT/IB00/00104

-1-

Rec'd PCT/PTO 03 AUG 2001

GOLF TEE

BACKGROUND OF THE INVENTION

This invention relates to a device, in particular a golf tee, for supporting an object such as a golf ball on a ground surface such as the surface of a teeing mound.

Golf tees are usually made from wooden or plastics materials. Although these materials are softer than the metal club face of a golf club, in use the tees do sometimes damage the club face. In use the tee is also often broken and broken tees tend to litter golf courses and cause damage to mower blades on the golf course.

South African patent no. 87/5576 discloses a golf tee which is made up of two parts. The first part defines a rigid shaft for the tee and the second part defines a cup for the tee. The cup, which is arranged to support a golf ball, is made from a yieldable material and is designed to absorb impact when it is struck by the face of a golf club. The object of this is to stop the tee from breaking and also to cause less damage to the club face. However, in practice, this type of tee does break and also causes damage to the club face especially if the club face strikes the rigid shaft.

It is an object of this invention to provide a golf tee that addresses these problems.

CONFIRMATION COPY

SUMMARY OF THE INVENTION

According to the invention there is provided a device for supporting a ball, such as a golf ball, on a ground surface, such as a teeing mound, the device including:

- a base;
- engagement means for engaging the base to the ground surface; and
- at least one elongated resilient support member, extending from the base, which defines a support surface for supporting the ball.

Advantageously, the device includes a plurality of support members, in form of bristles, which extend from an operatively upper face on the base and which define the support surface.

The bristles may be from 30 to 10mm in length, preferably the bristles are either 27mm, 22mm or 15mm in length.

Advantageously, the bristles are arranged on the upper face to define an annular support surface for supporting the ball.

Typically, the annular support surface has an inside radius of 5mm and an outside radius of 7,5mm.

Advantageously, the bristles are arranged in clusters, typically from 8 to 15 clusters, with from 10 to 25 bristles per cluster.

The bristles are preferably made from nylon and have a thickness of 0,4mm.

Typically, the upper face of the base is circular in shape and has a width of about 18mm.

The engagement means is typically a pointed shaft which extends from an operatively lower face on the base and which is arranged to be pushed into the ground surface.

Advantageously, the shaft is formed integrally with the base.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a side view of a golf tee according to the invention supporting a golf ball;

Figure 2 is a cross-sectional side view of the golf tee of Figure 1, with the support bristles removed; and

Figure 3 is a top view of the golf tee of Figure 1, with the support bristles removed.

DETAILED DESCRIPTION OF THE INVENTION

Referring to Figure 1, a golf tee according to the invention, for supporting a golf ball 12 on a ground surface 14, is shown generally by the numeral 10. The golf tee 10 includes a base 16 defining an operatively upper face 18 and an operatively lower face 20. A pointed shaft 22 extends from the lower face 20 and support bristles 24 which are elongate and resilient extend from the upper face 18. The support bristles 24 define an annular upper support surface 26 which supports the golf ball 12. The annular support surface 26 has an inner radius R_1 of 5mm and an outer radius R_2 of 7,5mm. The support bristles 24 are made of nylon and have a thickness of 0,4mm. The support bristles 24 are arranged in clusters 28 of about twenty bristles per cluster. There are twelve clusters 28 of bristles 24.

Referring to Figure 2, the base 16 is formed integrally with the shaft 22 and is typically moulded from a hard plastics material such as acrylonitrile butadiene styrene (ABS plastic). The length L of the shaft 22 depends on the ground surface on which the golf tee is to be used. Typically, the shaft 22 has a length of about 30mm.

Referring now also to Figure 3, the upper face 18 of the base 16 is circular in shape and has a width W of 18mm. A series of holes 30, (in this case twelve holes), are formed in the upper face 18. The twelve holes are arranged in a circular formation. About twenty bristles are inserted into each hole 30, to form the clusters 28 shown in Figure 1.

In use, the shaft 22 of the golf tee 10 is inserted into a ground surface such as a tee mound until the lower face 20 of the base 16 comes into contact with the ground surface. A golf ball 12 is placed on top of the support surface 26 defined by the bristles 24 and the golfer then hits the ball 12 off the golf tee with the club face of a golf club (not shown).

The advantage of the golf tee 10 according to the invention is that when the ball is hit, the face of the golf club only comes into contact with and passes through the soft resilient bristles 24 of the tee. The soft resilient bristles 24 do not damage the club face and provide very little resistance or deflection to the club face when the golf ball is hit. Another advantage is that (unless the club face hits the base 16) the tee is not broken when a ball is hit. This saves golf tees and there is less littering of a golf course with broken golf tees.

Referring to Figure 1, the height H of the support bristles 24 may vary from 30mm to 10mm, depending on the golf club used and the preference of the golfer. In practice, the golf tee 10 according to the invention is provided with support bristles 24 with heights H of 27mm, 22mm or 15mm. A golfer can then select the tee height that he or she wishes to use.

Although this invention has been described for supporting golf balls, it is envisaged that it may be used for supporting other types of balls that require a support from which they are hit or kicked.

CLAIMS

1. A device for supporting a ball on a ground surface, the device including:
 - a base;
 - engagement means for engaging the base to the ground surface; and
 - at least one elongated resilient support member, extending from the base, which defines a support surface for supporting the ball.
2. A device according to claim 1 which includes a plurality of support members, in form of bristles, which extend from an operatively upper face on the base and which define the support surface.
3. A device according to claim 2 wherein the bristles are arranged to define an annular support surface for supporting the ball.
4. A golf tee for supporting a golf ball on a ground surface, the golf tee including:
 - a base;
 - engagement means for engaging the base to the ground surface; and
 - at least one elongated resilient support member, extending from the base, which defines a support surface for supporting the ball.
5. A golf tee according to claim 4 including a plurality of support members, in form of bristles, which extend from an operatively upper face on the base and which define the support surface.

6. A golf tee according to claim 5 wherein the bristles are arranged to define an annular support surface for supporting the ball.
7. A golf tee according to claim 6 wherein the annular support surface has an inside radius of 5mm and an outside radius of 7,5mm.
8. A golf tee according to any one of claims 5 to 7 wherein the bristles are from 30mm to 10mm in length.
9. A golf tee according to claim 8 wherein the bristles are 27mm, 22mm or 15mm in length.
10. A golf tee according to any one of claims 5 to 9 wherein the bristles are arranged in clusters with from 10 to 25 bristles per cluster.
11. A golf tee according to any one of claims 5 to 10 wherein the bristles are nylon bristles and have a thickness of 0,4mm.
12. A golf tee according to any one of claims 4 to 11 wherein the upper face of the base is circular in shape and has a width of about 20mm.
13. A golf tee according to any one of claims 4 to 12 wherein the engagement means is a pointed shaft which extends from an operatively lower face on the base and which is arranged to be pushed into the ground surface.
14. A golf tee according to claim 13 wherein the shaft is formed integrally with the base.

INTERNATIONAL SEARCH REPORT

International Application No.

PCT/IB 00/00104

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A63B57/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A63B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 2 258 161 A (ST JOHN ET AL.) 3 February 1993 (1993-02-03) the whole document	1-14
X	WO 95 07118 A (SVENSSON) 16 March 1995 (1995-03-16)	1-12
A	page 4, paragraph 2 -page 5, last paragraph; figures 1,5,6	13,14
X	DE 90 05 261 U (TOPIARZ) 12 July 1990 (1990-07-12)	1-11,13, 14
A	the whole document	12
X	GB 236 132 A (LLOYD) 23 July 1995 (1995-07-23)	1-9,13, 14
A	page 1, line 94 -page 2, line 31; figures 4-6	12
	--- -/--	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

26 April 2000

Date of mailing of the international search report

04/05/2000

Name and mailing address of the ISA
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INTERNATIONAL SEARCH REPORT

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>PATENT ABSTRACTS OF JAPAN vol. 016, no. 509 (C-0997), 21 October 1992 (1992-10-21) & JP 04 189374 A (TSUGUYASU SAKAMOTO), 7 July 1992 (1992-07-07) abstract</p> <p>-----</p>	<p>1-9, 12, 13</p>

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/IB 00/00104

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
GB 2258161 A	03-02-1993	NONE	
WO 9507118 A	16-03-1995	AU 7628394 A SE 9302864 A	27-03-1995 07-03-1995
DE 9005261 U	12-07-1990	AU 7774691 A WO 9116951 A EP 0527965 A	27-11-1991 14-11-1991 24-02-1993
GB 236132 A		NONE	
JP 04189374 A	07-07-1992	NONE	